

IN THE CLAIMS:

1. (currently amended) A vessel filter comprising a mounting section having a first proximal end and a second distal end and a first proximal non-occluding filtering section and a second distal non-occluding filtering section for capturing particles while enabling blood flow therethrough, and a longitudinal axis having a center point along the axis, the filter movable between a collapsed position for delivery to the vessel and an expanded position for placement within the vessel, in the expanded position a first end of the first filtering section converges to form a first proximal converging region and a second end of the second filtering section converges to form a second distal converging region, the first filtering section converging to a first tubular portion and the second filtering section converging to a second tubular portion, the first converging region being positioned radially and axially inwardly of the first end of the mounting section which contacts the wall of the vessel and the second converging region being positioned radially and axially inwardly of the second end of the mounting section which contacts the wall of the vessel in such expanded position such that the first and second converging regions are a closer axial distance to the center point than the ends of the mounting section contacting the vessel wall and a proximalmost end point of the mounting section is proximal of a proximalmost end point of the first converging region and a distalmost end point of the mounting section is distal of a distalmost end point of the second converging region, and the distalmost edge of the first tubular portion is proximal of the distalmost end point of the mounting section which contacts a wall of the vessel and the proximalmost edge of the second tubular portion is distal of the proximalmost end point of the mounting section which contacts the wall of the vessel to thereby direct particles to the center of the filter in the path of greater blood flow through the filter, the filter moving to such expanded position without application of an external force to the converging regions, and the filter having a plurality of struts extending from the first converging region to the second converging region.

2. (previously amended) The vessel filter of claim 1, wherein the filter is composed of a singular tube having cutouts therein forming the plurality of longitudinal struts.

3. (original) The vessel filter of claim 1, wherein the mounting section includes a plurality of longitudinally extending struts.
4. (original) The vessel filter of claim 1, wherein portions of the filter connecting the first and second end of the mounting sections to the respective converging region angle radially inwardly and toward a center of the filter to direct particles toward the center.
5. (original) The vessel filter of claim 3, wherein the longitudinal struts include roughened surfaces to engage the vessel wall to increase retention.
6. (original) The vessel filter of claim 3, further comprising a plurality of vessel engaging members with pointed ends extending from the longitudinal struts to engage the vessel wall to increase retention.
7. (original) The vessel filter of claim 1, wherein the filter is composed of shape memory material.
8. (previously amended) The vessel filter of claim 3, wherein opposing ends of at least one of the longitudinal struts are out of phase.
9. (original) The vessel filter of claim 3, wherein the longitudinal struts are spaced circumferentially about 60 degrees apart.
10. (canceled) The vessel filter of claim 1, wherein the filter has a plurality of spaced apart struts, the struts converging toward a center of the filter.
11. (currently amended) The vessel filter of claim 1, wherein at least one of the struts has varying widths along its length, a portion of the strut parallel to the longitudinal axis having a first width and an angled portion of the strut having a second width less than the first width.

12. (currently amended) An apparatus comprising a vessel filter comprising a tubular member having a longitudinal axis with a center point along the axis and having a plurality of cutouts formed therein forming a series of spaced apart struts and movable between a first insertion configuration and a second deployed configuration, in the second configuration the struts extend substantially longitudinally and form a mounting section extending from a first proximalmost end point to a second distalmost end point, the struts in the mounting section having a parallel component parallel to a longitudinal axis of the filter, the struts further extending from the first end point and from the second end point radially inwardly towards the center point of the filter to form first and second non-occluding filtering sections, the first filtering section having a proximalmost end point and the second filtering section having a distalmost end point, wherein in the second configuration the filtering sections are each positioned a closer axial distance to the center point of the filter than the first and second ends of the mounting section such that the proximalmost end point of the mounting section is proximal of the proximalmost end point of the filtering section and the distalmost end point of the mounting section is distal of the distalmost end point of the filtering section and a first axis transverse to the longitudinal axis and passing through the distalmost edge of a first tubular portion from which the struts of the first filtering section extend is proximal of a second transverse axis passing through a distalmost end point of a parallel component of the mounting section and a third axis transverse to the longitudinal axis and passing through the proximalmost edge of a second tubular portion from which the struts of the second filtering section extend is distal of a fourth transverse axis passing through a proximalmost end point of a parallel component of the mounting section to direct particles to the center of the filter in the path of greater blood flow through the filter, the filter moving to such second configuration without application of an external force to the filtering sections.

13. (original) The vessel filter of claim 12, wherein the longitudinal struts include a plurality of vessel engaging members extending therefrom to engage the vessel wall to increase retention.

14. (original) The vessel filter of claim 12, wherein the filter is composed of a shape memory tubular material having cutouts therein.

15. (currently amended) The vessel filter of claim 12, wherein end portions of at least one of the longitudinal struts are twisted out of phase.

16. (original) The vessel filter of claim 12, wherein the portion extending radially inwardly of at least one of the longitudinal struts has a width different than a longitudinally extending portion of the strut.

17. (original) The vessel filter of claim 12, further comprising a rib connecting adjacent longitudinal struts.

18. (currently amended) A method of implanting a vessel filter in a patient's body to direct particles to the center of the filter while enabling blood flow through the filter, the method comprising the steps of

providing a non-occluding vessel filter having a longitudinal axis having a center point, a mounting section, first and second filtering sections each terminating in a converging end region into a tubular portion and a plurality of struts extending substantially parallel to the longitudinal axis to engage a vessel wall;

providing a tubular delivery member containing the vessel filter in a collapsed configuration having a first diameter;

inserting the vessel filter in the collapsed configuration adjacent a surgical site;

deploying the vessel filter from the delivery member so the vessel filter, without application of an external force, moves to a placement configuration having a diameter larger than the first diameter and the converging end regions of the filtering sections are closer to the center of the longitudinal axis of the filter than end portions of the mounting section to direct particles to the center of the filter in the path of greater blood flow through the filter, the vessel filter being composed of shape memory material and movement of the vessel filter

to the placement configuration moves the vessel filter towards a memorized configuration; and

after a period of time after insertion of the filter, removing the implanted vessel filter from the patient's body.

19. (canceled) The method of claim 18, wherein the vessel filter is composed of shape memory material and movement of the vessel filter to the placement configuration moves the vessel filter towards a memorized configuration.

20. (canceled) The method of claim 19, further comprising the step of removing the implanted vessel filter from the patient's body.